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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,576	10/17/2003	Shinobu Kokufu	56937-084	8933
20277	7590	09/22/2005	EXAMINER	
MCDERMOTT WILL & EMERY LLP 600 13TH STREET, N.W. WASHINGTON, DC 20005-3096			NGUYEN, DONGHAI D	
			ART UNIT	PAPER NUMBER
			3729	

DATE MAILED: 09/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/686,576	<b>Applicant(s)</b> KOKUFU ET AL.	
	<b>Examiner</b> Donghai D. Nguyen	<b>Art Unit</b> 3729	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 June 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/985,453.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/17/03</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Specification***

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --METHOD OF MANUFACTURING CIRCUIT BOARD--.

2. The Specification line 2 after "November 8, 2001" insert of: --now US Patent 6,73,688--.
3. The abstract of the disclosure should be revised to reflect the claimed method invention. Correction is required. See MPEP § 608.01(b).

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

5. Claims 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) The phrase "mottle-like" (claim 13, line 6) renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "mottle-like"), thereby rendering the scope of the claim(s) unascertainable.

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b) “the plurality” (claim 13, line 9); “said conductive powder” (claim 13, lines 9-10); “the minute recess” (claim 15, line 3); “the adhesion” (claim 15, lines 3-4); “the storage amount” (claim 15, line 5) lack antecedent basis.

c) It is unclear whether “a adhesive surface” (claim 14, lines 3-4) and “a protective agent” (claim 14, line 4 and claim 15, lines 6-7) are the same as “a adhesive surface” and “a protective agent” as previously presented in claim 13, lines 5-6.

d) The limitations “to be capable of” (claim 13, lines 10-11) and “may be exposed” (claim 16, line 6) are not positive method limitations. The phrases i.e., “may be” should be deleted.

e) “where said protective agent does not exist in a state ... said wiring layer” (claim 13, lines 8-11) are indefinite and confusing because it is not known as to what being referring as “in a state”.

f) “electrically and physically joining” (claim 13, line 14) is unclear and confusing as to what being claimed as “electrically and physically joining”. The use of: i.e., joining the conductive foil and the conductive paste as to form a connection thereto is referred.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claim 13 as best understood is rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,440,542 to Kariya.

Kariya discloses a method for producing a circuit board comprising: forming a through hole (26) on an insulator substrate or layer (12) and then filling said through hole with a conductive paste (30 see Figs. 2b-d); forming a metal layer as protective agent (16) on surface as adhesion surface of a conductor foil (14) which provides a wiring layer (14, as discussed at Col. 6, lines 43-46), and forming each dimension of adhesion surface regions where said protective agent (16) does not exist in a state/area that a plurality of a conductive powder constituting said conductive paste is abutted on the said wiring layer (Fig. 2b); sticking said conductor foil (14) to said insulator layer; and joining by bonding said conductor foil and said conductive paste by abutting the plurality of said conductive powders and said conductor foil each other and laminating such as heating and pressurizing (see Fig. 4 and Col. 5, lines 63-66). Note the liquid etching of Kariya (see Col. 6, lines 38-41) readable as “dispersing and forming” as claimed by the instant application.

***Allowable Subject Matter***

8. Claims 14-16 are would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art references cited for teaching of manufacturing circuit board.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghai D. Nguyen whose telephone number is (571)-272-4566. The examiner can normally be reached on Monday-Friday (9:00-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter D. Vo can be reached on (571)-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DN  
September 15, 2005

  
MINH TRINH  
PRIMARY EXAMINER